DOCUMENT RESUME

ED 114 363 SP 009 603

AUTHOR Romano, Francis A.
TITLE The Development of a Self-Instructional System for Teaching Basic Educational Media Competencies to Elementary Education Students at Trenton State College.
PUB DATE 18 Aug 75
NOTE 36p.; A practicum presented in partial fulfillment of the requirements for the degree of Doctor of Education (Nova University, August 18, 1975)

EDRS PRICE MF-$0.76 HC-$1.95 Plus Postage
DESCRIPTORS *Autoinstructional Aids; Behavioral Objectives; *Course Descriptions; *Instructional Media; *Performance Based Teacher Education; Performance Criteria; Teacher Education

ABSTRACT

Experts in the fields of educational media and competency-based teacher education at Trenton State College were consulted in an effort to gain their support and employ their knowledge and experience in the development of this self-instructional system. In addition to these consultations, the objectives of the educational media course that would be developed through the self-instructional system were analyzed in an effort to outline the competencies and to facilitate instructional implementation of the system. As a result of both the consultations and the analysis of the course objectives, plans were made to begin development of the self-instructional system in September 1975. A target date of February 1976 was set for commencing instructional operation of the system. The self-instructional system will consist of 16 wet study carrel stations which will be equipped with the devices and materials necessary for developing the competencies. The system will employ 3/4" color video cassettes for presenting each competency through a single concept approach that follows the outline of each competency module. (The competency module outline is included in this report.) (Author)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED114363

THE DEVELOPMENT OF A SELF-INSTRUCTIONAL SYSTEM FOR TEACHING BASIC EDUCATIONAL MEDIA COMPETENCIES TO ELEMENTARY EDUCATION STUDENTS AT TRENTON STATE COLLEGE

LEARNING THEORY AND APPLICATIONS

by

Francis A. Romano, M.S.

Trenton State College

DR. KENNETH VARCOE
CLUSTER COORDINATOR

A PRACTICUM PRESENTED TO NOVA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF EDUCATION

NOVA UNIVERSITY

AUGUST 18, 1975

SP009 603

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

TABLE OF CONTENTS

	Page
INTRODUCTION	1
BACKGROUND AND SIGNIFICANCE	1
PROCEDURES	12
RESULTS: THE SELF-INSTRUCTIONAL SYSTEM	13
RESULTS: INSTRUCTIONAL IMPLEMENTATION OF THE SELF-INSTRUCTIONAL SYSTEM	16
RECOMMENDATIONS	30
BIBLIOGRAPHY	33

INTRODUCTION

Elementary education students at Trenton State College receive an introductory course in educational media in the junior year of their program. Since this course is presented concurrently with the junior year teaching practicum experiences of these students, it is important that they receive certain basic competencies early in the semester of the course. However, faculty members who teach this course have found numerous difficulties in developing these basic competencies early enough in the semester to meet the immediate needs of the students without sacrificing other important cognitive aspects of the course content.

These basic competencies, which involve behavioral objectives, concern the operation of various types of audio and visual equipment and several techniques of producing instructional materials. The cognitive aspects of the course involve insight and understanding of the values related to the integration and utilization of the basic competencies within the teaching-learning process. In order to facilitate the complete development of both areas of the course, it is important that a self-instructional program be employed for the development of the basic competencies. Such a program would permit the students to develop these competencies independently and thereby provide more economic use of scheduled classroom time. Therefore, the purpose of this study was to develop a self-instructional system for use in the development of the basic educational media competencies in elementary education students.

BACKGROUND AND SIGNIFICANCE

The introductory course in educational media that was presented to elementary education students at Trenton State College in the early 1960's provided more classroom contact time than the same course offered in 1975. This change in classroom contact time occurred as a result of a revision

in the basic elementary education curriculum offerings in the junior year of the program. Prior to 1967, the students received the course during the semester before or after the junior year teaching practicum experiences. Therefore, the classroom contact time involved a 120 minute class meeting per week for a period of 16 weeks. This provided a total of 32 hours of classroom contact time during the semester.

However, it was found that the educational media competencies presented to these students under this arrangement were isolated from immediate application to the teaching practicum situation. In order to facilitate meaningful application of the educational media experiences with the teaching practicum program, the educational media course was integrated with other methods courses offered within the junior year teaching practicum program block. As a result of this change, the classroom contact time in the course was reduced to a maximum of 22 hours.

The quantity of course content that was presented under the former arrangement could no longer be covered within the present arrangement due to the teaching practicum time requirements. Faculty members teaching the educational media course were faced with the problem of covering as much of the course content as possible within a shorter period of time. They also faced the problem of presenting the course content according to a sequence that would best meet the immediate needs of the students in their teaching practicum experiences. Although there is great value in this present arrangement, the problem of adjusting the educational media course content is significant and requires a system in which the faculty can offer all the relevant experiences necessary within the educational media course to meet the immediate and anticipatory needs of the students.

The content of the educational media course involves three major areas which include equipment operation skills, production of instructional media

skills, and the study of the selection, integration, utilization and evaluation of educational media within the teaching-learning process. Under the present circumstances, the latter or third major area cannot be covered in enough detail because the equipment skills and production skills require a major portion of the existing 11 class meetings. Philosophically, the value of extensively covering equipment and production skills with a limited or watered-down coverage of selection, integration, utilization and evaluation of media is questionable. When the student has the motor skills of media but lacks the concepts of media within the teaching-learning process, his skills cannot be employed effectively within the total scope of media utilization.

This problem was encountered by other colleges and universities, and they solved it by developing self-instructional programs for teaching skills in equipment operation and instructional media production. Through these programs, numerous other instructional problems were also sloved. Students were able to develop the skills at their own pace without classroom demonstrations of the skills which were often difficult to see and understand. Also, faculty members had more time to devote to other areas of the course content that were not best served through self-instruction.

The situation in educational media instruction at Trenton State College is very similar to David H. Curl's statement that typical instruction on the operation of audiovisual devices has been by the demonstration-practice method.[1] This is also true for the teaching of instructional media production skills at Trenton State College. Curl describes the demonstration-practice method as featuring a live classroom demonstration of each device

---

[1]David H. Curl, "The Self-Instructional Audiovisual Laboratory," Educational Screen A. V. Guide: XLVI (May, 1967), p. 24.

or production process to the entire group of students. Students are then expected to observe (if they are sitting close enough to see), to take notes on everything, and then report at some later date to a practice session in which they may actually get their hands on the equipment. However, there are seldom enough pieces of equipment for everyone to practice and the instructor cannot be everywhere at once. Such a practice session usually requires a prohibitively large inventory of equipment and many experienced personnel.[2] In addition to these problems, this sort of practice session or production or equipment workshop as termed at Trenton State College consumes many class meetings that could be used for other areas of the course content.

Automated self-instruction can be used to help solve these problems. It offers several advantages: instruction is consistent, while allowing for individual differences in aptitude; equipment inventory can be limited to one item of each type; scheduling conflicts are all but eliminated; the equipment may be left in a set-up position; no student need feel "forced" into humiliating mechanical confrontation before others; fewer instructors are needed and they can use their time and class lectures for discussing problems of evaluation, utilization and curricular integration of media.[3]

Curl further states that self-instructional systems can provide most of the fundamental skills needed by teacher trainees for the operation of present and future technological devices, and that students can teach themselves these fundamental skills to a very satisfactory level of performance.[4] These statements are based on Dr. Curl's experiences with such programs

---

[2] Ibid., p. 25.

[3] Ibid.

[4] Ibid.

at Western Michigan University and the University of Connecticut.

Western Michigan University established the laboratory portion of its basic audiovisual course on an auto-tutorial basis because of growing enrollments. Without such a program, it would have been impossible to provide each of 2400 student teachers with an adequate audiovisual experience using conventional methods of laboratory instruction. In this program, the university employed a 15 station equipment operation laboratory with self-instructional materials. Each station used by the students for self-instruction had a tape recording and an 8mm cartridged film covering the skill of that particular station. The students were also provided with printed reference guides and a lab manual for use in solving problems and answering questions.[5]

The self-instructional audiovisual laboratory employed by the University of Connecticut was established in 1963. The purpose of the laboratory was for training students in the operation of audiovisual equipment. This system employed 7 carefully prepared sets of captioned 2" x 2" slides that were supplemented by 8mm cartridged films. The content of each covered a separate piece of projection and recording equipment. The method proved to be sound both instructionally and economically, and more than 60 colleges, universities and school systems purchased the program sets since they were released commercially in 1966.[6]

These examples of self-instructional programs are simply an extension of the early forms of programmed learning. Programmed instruction has expanded extensively since the days of the early teaching machines and programs at

---

[5]David H. Curl, "Western Michigan University Auto-Tutorial," Audiovisual Instruction: XII (May, 1967), p. 480.

[6]David H. Curl, "University of Connecticut Slide Sets," Audiovisual Instruction: XII (May, 1967), p. 480.

Harvard University. Learning tasks which were unthought of in the days when programs were written almost exclusively for highly structured college level subject matter now are relatively commonplace. Employees and managers of Burger Chef and Mister Donut learn from programmed instruction and so do trainees in the General Electric Computer Plant. The linear versus branching controversy in programmed instruction is largely academic and programs are now presented via many different forms of media.[7]

This was part of the rationale for developing a self-instructional program in audiovisual education at Arizona State University. In this self-instructional system, the learner first observes the behavioral task on an 8mm film which shows a demonstrator performing the behavior to be learned. As a result, the learner's behavior theoretically comes under the stimulus control of the film as he performs the various steps of the operation. The learner may stop the projector at any time while he performs the portion of the task just witnessed and he may view the film as often as he wishes. A manual is also employed with the film and it provides a series of textual cues for the procedures modeled in the film.[8]

These self-instructional methods can also help the student develop self-confidence in the handling and operation of audiovisual equipment which he or she encounters for the first time in a new situation. Having the fundamental skills with one piece of equipment and having learned these skills through self-instruction, the student will have self-confidence in attempting to transfer that ability to a new piece of equipment. Ronald Schlieve made an important point about self-confidence when he stated

---

[7]Vernon S. Gerlack, "Programming Audiovisual Laboratory Instruction," Educational Screen A. V. Guide: XLVI (May, 1967), p. 20.

[8]Ibid.

that the teacher may be committed to the value of instructional media in teaching, but due to a lack of confidence in operating the equipment and solving basic problems, he may not use the various forms of media and equipment.[9] Self-instruction and self-help therefore seem to help in the development of self-confidence.

In its self-help program, the College of Education Media Lab at Florida Atlantic University provides a self-instructional media laboratory for all students in the College of Education. One of the purposes of this lab is to assist students in acquiring for themselves the basic equipment operation and production skills of audiovisual education. After analyzing the learning tasks to be performed, an information base was developed and provided to the students in the form of a display. This display was placed within the equipment training area. The students would then refer to the display as they manipulated the equipment or began the production task. In addition to the display material, the learner was provided different forms of information support. These included a printed program, a sound filmstrip and a cassette sound film, all of which served the purpose of self-instruction.[10]

The University of Hawaii devised an individualized program in audiovisual equipment operation as part of its audiovisual course because it was virtually impossible for all education students to receive small-group or individualized instruction on the equipment. This program involves a self-instructional laboratory consisting of 6 student stations which are equipped with a manual of instructions, a tape recorder, filmstrip projector, 16mm motion picture projector and associated instructional materials. Sets of

---

[9] Ronald P. Schlieve, "Wisconsin State University's Auto-Instructional Laboratory," Audiovisual Instruction: XII (May, 1967), p. 488.

[10] D. A. Gorman, "Step Beyond: The Facilitation of Learning Through a Self-Help Instructional Media Laboratory," Audiovisual Instruction: XVIII (December, 1973), p. 5.

flip-card programs and captioned visual displays provide the step-by-step sequence of operating each piece of equipment and performing each production technique. With full time supervision, the self-instructional laboratory is capable of serving 500 students each semester. The university found that the extended use of the self-instructional programs permitted the teaching staff to spend a greater portion of time helping students plan and evaluate their semester media utilization projects.[11]

In 1964, the faculty and staff of the Teaching Aids Laboratory at Ohio State University found themselves spending increasing amounts of time teaching faculty and students basic skills and techniques in educational media. As a result of the time demand factor, the Educational Media Laboratory was established to meet these increasing demands for media skills. Programmed instruction was employed in the media lab for the use of audiovisual devices. This programming varied from simple charts to phamplets, on to tape recorded-slide units and video tapes. The programmed instructional materials covered the basic projection and recording equipment and some basic techniques of producing audiovisual materials.[12]

During the same time that the Ohio State University program was being developed, the New York City Board of Education was involved in producing telecasts for the purpose of helping its teachers with skills in the use of media. This approach involved the production of 15 half-hour video tapes entitled "The Utilization of Audiovisual Media in the Classroom." The video tapes were presented on Channel 13, WNDT at a time slot after school in order to reach an audience of teachers. Eight hundred teachers registered for the

---

[11] Lucius A. Butler, "Self-Instruction Lab Teachers Communication Skills," Audiovisual Instruction: XV (February, 1970), p. 55.

[12] Patricia A. Macklin, "Ohio State's Media Lab," Audiovisual Instruction: XII (May, 1967), p. 484.

course and each received a kit which included self-instructional materials. The objectives of the course were to (a) stimulate teachers to use audio-visual media in teaching, (b) to help teachers use media effectively, and (c) to encourage teachers to train themselves to operate a tape recorder and a 16mm motion picture projector. One course requirement stipulated that the teachers use the kit and program manual along with the appropriate equipment and that they record their responses on supplied answer sheets. These assignments were due after viewing the telecasts dealing with tape recording and 16mm film utilization. An evaluation of the program showed that 84 percent of the elementary teachers, 80 percent of the junior high school teachers and 82 percent of the high school teachers said that the objectives of equipment operation were met. The evaluation also indicated that this programmed instruction was successful as a method of teacher training.[13]

Syracuse University has also employed a self-instructional program in the area of audiovisual education. Since its establishment in 1962, the program has become an integral part of the university's rapidly growing Center for Instructional Communications. The self-instructional system enables more than 300 students each year to acquire competencies, on their own time and at their own pace, in operating standard audiovisual equipment. The basic facilities of the self-instructional laboratory consist of 4 student stations which were constructed to provide space for the operation and storage of equipment. Each station is equipped with an illustrated manual, a tape recorder, a phonograph, a 2" x 2" slide projector with filmstrip adaptor, a 16mm motion picture projector, and the necessary practice films and filmstrips, prerecorded tapes and instructional slide sets.

---

[13] Morris Freedman, "New York City's Televised Teacher Training Telecasts," Audiovisual Instruction: XII (May, 1967), p. 483.

Headphones are also provided so that all 4 stations may be used conveniently in one room. The student begins the self-instructional sequence by learning how to operate the tape recorder through the use of a flip chart of photographs showing the step-by-step procedure. The student then uses the tape recorder to run an instructional tape on how to use the slide and filmstrip projector. This sequential procedure continues through other pieces of equipment which include the overhead and opaque projectors, and finally a 2" x 2" set of slides shows the student how to operate a 16mm motion picture projector. Each skill requires the student to receive instructions through the use of a device he or she has already learned to operate. The university found that most students complete the program in less than 4 hours, at which time they are given a competency examination by a graduate student. The examination is based on operation time and error factors.[14]

An auto-instructional laboratory is also used by Wisconsin State University to teach prospective teachers audiovisual equipment operation and some graphic production techniques. This system covers the operation of tape recorders, opaque and overhead projectors, slide and filmstrip projectors, and 16mm motion picture projectors while the production skills involve the equipment and processes of mounting pictures, producing transparencies and the lettering of instructional materials. The laboratory technique of self-instruction employs the use of wet study carrels that are equipped with an 8mm single concept motion picture projector and supporting materials. The carrels also include a carousel slide projector which illustrates the process to be learned and performed at the carrel station. The manual used by the students contains the objective of the skill, the prerequisite for the skill, materials needed and the procedure. After reading the

---

[14]Sidney Rothenberg, "Self-Instruction at Syracuse University," Audiovisual Instruction: XII (May, 1967), p. 481-482.

appropriate area of the manual and viewing the visual program in either 8mm film or 2" x 2" slides, the student performs the skill while referring to any of the programmed materials as needed.[15]

An extremely sophisticated approach to self-instruction using dial access retrieval systems is employed by the Media Laboratory of the University of Maryland for developing various competencies in students of many disciplines. This system offers its patrons an extensive and varied repertoire of learning options. The laboratory is a matrix of audiovisual systems that capitalize on all non-print media as they apply to self-instruction. A student may use the laboratory in order to prepare and/or meet the needs of an instructor's required assignment. For example, the student may need to view a biology dissection in high resolution color video cassette or listen to the musicology selection of an instructor in preparation for the next class meeting. In addition to the dial access retrieval systems for some programmed materials, the laboratory circulates audiovisual programmed materials on a reserve basis similar to the reserve circulation of print media for student reading assignments.[16]

A self-instructional system somewhat similar to those systems mentioned above could help the educational media faculty of Trenton State College solve its instructional problems in the area of basic educational media competencies. The new Center for Media and Technology at Trenton State College contains a building complex area where a self-instructional laboratory could be developed. This Center is more than convenient for such a laboratory because the educational media classrooms are located in the immediate area of the building complex, and therefore the laboratory would be easily accessible

---

[15] Schlieve, op. cit., p. 488.

[16] R. Ross Hempstead, "Push-Button Education in the University of Maryland's Non-Print Media Lab," College and University Business: LV (October, 1973), p. 29-32.

to students who would be using the self-instructional system. In addition to the advantages of its location for such a system, the Center for Media and Technology also contains the Instructional Media Resources Area and the Audiovisual Equipment Storage and Campus Service Area. With some minor changes in the present facilities, equipment and materials for a self-instructional system could be stored, circulated on a reserve basis and serviced through this Center. Therefore, the focus of this study was the development of a self-instructional system for teaching basic educational media competencies to students enrolled in the introductory educational media course at Trenton State College.

PROCEDURES

The nature of this study required procedures that included consultations with experts in the fields of educational media and competency based teacher education at Trenton State College. Professional staff members of the Center for Media and Technology were consulted in an effort to plan for the organization of the self-instructional laboratory through the utilization of the present physical facilities of the Center. In addition to the physical facilities, these consultations also concerned the organizational planning for the selection and assignment of equipment and materials that would be used in the laboratory, and the methods of presentation that would meet the self-instructional needs of the students.

Faculty members who teach the introductory course in educational media and other members of the Media Communication Science Department were also consulted concerning the physical facilities and the methods and materials that should be employed in the self-instructional laboratory system. However, these consultations with the faculty members also involved the selection of the educational media competencies that should be included in the self-instructional laboratory system.

Since the School of Education at Trenton State College has recently become involved in the examination and evaluation of competency based teacher education programs, professionals in this field at the college were also consulted in an effort to gain their support and employ their knowledge and experience in the development of the self-instructional system.

Twelve major figures were involved in the consultations and they are listed below according to their status within the college:

Administrators

Dean of the School of Education
Coordinator of the Competency Based Education Project for Teacher Education at Trenton State College
Director of the Center for Media and Technology
Technical Supervisor of the Center for Media and Technology

Faculty Members - Media Communication Science Department

Associate Professors (2) Includes Department Chairperson
Assistant Professors (6)

In addition to these consultations, the objectives of the introductory educational media course that would be developed through the self-instructional system were analyzed in an effort to outline the competencies and facilitate instructional implementation of the system. The analysis included the specific competencies that would be developed, the activities required of the student for developing the competencies and the methods for student evaluation.

RESULTS: THE SELF-INSTRUCTIONAL SYSTEM

The development of a self-instructional system at Trenton State College for teaching basic educational media competencies to elementary education students received strong support. One hundred percent of those professionals that were consulted strongly favored the development of the self-instructional system, and their professional advice provided direction for the immediate planning, organizational development and instructional implementation of the

system.

The Center for Media and Technology will provide a 10' x 40' room for the development of the self-instructional laboratory. Within this area, 10 wet study carrel stations will be constructed for the presentation and development of competencies in the operation of projection and recording equipment. In addition to these 10 stations, 6 other wet study carrel stations will be constructed in the Media Center Production Workroom for the presentation and development of competencies in the production of instructional materials.

Each wet study carrel station will be equipped with a 3/4" video cassette playback unit with television screen and the particular piece of equipment and materials necessary for developing the specific competency module assigned to the carrel station. In addition, each wet study carrel station will be identified by a number that corresponds with the competency module number that is to be developed in the carrel station and the video cassette that presents the competency.

All those professionals that were consulted agreed that 3/4" color video cassettes would be the best medium for presenting the competencies that would be included in the self-instructional system. When compared with the effectiveness and overall expenses of presenting the competencies via 8mm or 16mm motion picture film and/or 2" x 2" slide-tape programs, it was concluded that the 3/4" color video cassette would be a more versatile approach that would be equally, if not more effective than motion picture film or slide-tape programs.

The versatility of the video cassette includes the ability to make changes in video and audio content without purchasing new video tape. Any type of video or audio mistake that occurs during production can simply be erased and shot again on the same video tape. Also, at any future time when the techniques of a particular competency change or need to be revised, the

revisions can be made simply through a new production on the same video tape. The ability to erase and use the same video tape for another competency production will reduce future expenses for the purchase of new materials. This is not the case with motion picture film or 2" x 2" slides.

The production of each video cassette that will be used in the self-instructional laboratory system will originate from a planned storyboard shot sheet and script that is based on the behavioral objectives of each competency module as presented in the educational media competency outline. Also, the production of the video cassettes will employ the use of 3 television cameras and utilize graphic materials and normal television effects such as scene switches and fades with appropriate close-up, medium and wide angle shots as needed. Each video cassette will be single concept in nature, cover the objectives stated in the educational media competency outline and run no longer than 5 minutes.

In order to communicate clearly and in coordination with the educational media competency outline, each video cassette will begin with a title graphic and a narration that introduces the student to the competency module and its objectives. The narration will also direct the student to view the cassette in its entirity one or more times and then to begin to perform the competency while reviewing the cassette by stopping, starting and rewinding as necessary.

The Director of the Center for Media and Technology has agreed to provide the technical staff and the television studio facilities that will be necessary for the production of the video cassettes. When the video cassettes are in final form and the self-instructional laboratory is ready to begin functioning, the Center for Media and Technology will also store and circulate the cassettes for utilization in the laboratory. In addition to this service, the Center for Media and Technology will provide supervision and overall service of the technical aspects of the self-instructional laboratory system.

The Dean of the School of Education and the Coordinator of the Competency Based Education Project for Teacher Education will provide financial support for the development of the self-instructional laboratory system. This support will come from a research and development grant of $50,000.00 for the development of the Competency Based Teacher Education Project at Trenton State College. The New Jersey Department of Higher Education provided $30,000.00 of the grant while the New Jersey Department of Education provided $20,000.00 of the grant. From this grant, the School of Education will provide monies for materials, equipment and personnel necessary for the development and operation of the self-instructional laboratory system.

RESULTS: INSTRUCTIONAL IMPLEMENTATION OF THE SELF-INSTRUCTIONAL SYSTEM

Faculty members of the Media Communication Science Department suggested that the self-instructional system include the development of competencies in the operation of the following projection and recording equipment:

Projection Equipment

Bell and Howell 16mm Motion Picture Projector (500 series)
Singer Graflex 16mm Motion Picture Projector
International Self-Threading 16mm Motion Picture Projector
Kodak Carousel 2" x 2" Slide Projector
Viewlex 35mm Filmstrip Projector
Singer Graflex 35mm Filmstrip Projector
Bessler Opaque Projector
Bessler, Century and Portascribe Overhead Projectors

Recording Equipment

Avid, Sony and Panasonic Cassette Tape Recorders
Newcombe and Sony Reel to Reel Tape Recorders

In addition to the projection and recording equipment competencies, the faculty suggested that the self-instructional laboratory system also include the following competencies in the production of instructional materials:

Production Techniques

3M Transparency Process
3M Thermal Spirit Master Production Process
3M Thermal Lamination Production Process

Diazo Transparency Production Process
Lift Transparency Production Process
Wet and Dry Picture Mounting Processes

The planned procedures for instructional implementation of these competencies through the self-instructional system were determined through an analysis of the behavioral objectives of the introductory educational media course. As a result of this analysis, plans were made for providing the students with an orientation to the self-instructional system and its purposes, instruction on its utilization and an outline of the procedures for developing the educational media competencies through the self-instructional system. The first and second class meetings of the course will be devoted to the execution of these planned procedures.

After receiving the orientation to the total scope of the self-instructional system and its purposes, the students will receive specific instructions on its utilization. These instructions will include the procedures for acquiring the video cassettes and the methods of using the video cassette playback unit that will be part of each wet study carrel station. Instruction on using the video cassette playback unit will be presented through the use of a video cassette on this concept. This presentation will be followed immediately by a demonstration-practice session on operating the video cassette playback unit.

Copies of the outline of procedures for developing basic educational media competencies through the self-instructional system will be presented to the students at the completion of instructions on utilizing the system. The outline will be presented in the following form:

OUTLINE

PROCEDURES FOR DEVELOPING BASIC EDUCATIONAL MEDIA COMPETENCIES THROUGH THE UTILIZATION OF THE SELF-INSTRUCTIONAL SYSTEM

COMPETENCY MODULE I: Bell and Howell 16mm Motion Picture Projector

A. Objectives: The student will be able to

1. attach the feed-reel to the projector
2. thread the film through the projector and attach the film to the take-up reel
3. operate the controls which include the
   a. power and lamp switch control
   b. volume and tone control
   c. focusing control
   d. framing control
   e. forward and reverse projection control
   f. projector elevation control
4. restore the upper and lower loops of the threaded film when smoothness of the projected image is lost and/or sound-film synchronization is lost
5. rewind the film after projection and remove the reels

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #1 from the Media Center
2. take the video cassette to Wet Study Carrel Station #1 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the practice film and projector provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting a film with the Bell and Howell 16mm Motion Picture Projector and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE II: Singer Graflex 16mm Motion Picture Projector

A. Objectives: The student will be able to

1. attach the feed-reel to the projector
2. thread the film through the projector and attach the film to the take-up reel
3. operate the controls which include the
   a. power and lamp switch control
   b. volume and tone control
   c. focusing control
   d. framing control
   e. forward and reverse projection control

f. projector elevation control

4. restore the upper and lower loops of the threaded film when smoothness of the projected image is lost and/or sound-film synchronization is lost
5. rewind the film after projection and remove the reels

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #2 from the Media Center
2. take the video cassette to Wet Study Carrel Station #2 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the practice film and projector provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting a film with the Singer Graflex 16mm Motion Picture Projector and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE III: International Self-Threading 16mm Motion Picture Projector

A. Objectives: The student will be able to

1. attach the feed-reel and take-up reel to the projector
2. insert the film into the automatic threading slot of the projector
3. operate the controls which include the
   a. automatic threading power switch control that advances the film through the projector and attaches the film to the take-up reel
   b. projector power and lamp switch control
   c. volume and tone control
   d. focusing control
   e. framing control
   f. forward and reverse projection control
   g. automatic loop restoration control
   h. projector elevation control
4. rewind the film after projection and remove the reels

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #3 from the Media Center

2. take the video cassette to Wet Study Carrel Station #3 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the practice film and projector provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting a film with the International Self-Threading 16mm Motion Picture Projector and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE IV: Kodak Carousel 2" x 2" Slide Projector

A. Objectives: The student will be able to

1. place slides into the carousel slide tray
2. place the carousel slide tray on the projector and engage for projection
3. operate the controls which include the
   a. power and lamp switch control
   b. focusing control
   c. slide advance and reverse projection control
   d. zoom lens control
   e. remote control device for focusing, advancing and reversing the slide projection
   f. slide-select control
   g. projector elevation device

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #4 from the Media Center
2. take the video cassette to Wet Study Carrel Station #4 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the practice slides and projector provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to

his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting slides with the Kodak Carousel 2" x 2" Slide Projector and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE V: Viewlex 35mm Filmstrip Projector

A. Objectives: The student will be able to

1. thread the filmstrip through the projector
2. operate the controls which include the
   a. power and lamp switch control
   b. advance and reverse filmstrip control
   c. focusing control
   d. framing control
   e. projector elevation control

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #5 from the Media Center
2. take the video cassette to Wet Study Carrel Station #5 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the practice filmstrip and projector provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting a filmstrip with the Viewlex 35mm Filmstrip Projector and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE VI: Singer Graflex 35mm Filmstrip Projector

A. Objectives: The student will be able to

1. thread the filmstrip through the projector
2. operate the controls which include the
   a. power and lamp switch control
   b. advance and reverse filmstrip control
   c. focusing control
   d. framing control

e. projector elevation control

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #6 from the Media Center
2. take the video cassette to Wet Study Carrel Station #6 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the practice filmstrip and projector provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting a filmstrip with the Singer Graflex 35mm Filmstrip Projector and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE VII: Bessler Opaque Projector

A. Objectives: The student will be able to

1. insert opaque materials such a mounted pictures, pages of magazines and books and three-dimensional objects into the projector
2. operate the controls which include the
   a. power and lamp switch control
   b. focusing control
   c. pointer light control
   d. projector elevation control

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #7 from the Media Center
2. take the video cassette to Wet Study Carrel Station #7 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the mounted picture, magazine, book, three-dimensional object and the projector provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by

stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting various opaque materials with the Bessler Opaque Projector and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE VIII: Bessler, Century and Portascribe Overhead Projectors

A. Objectives: With each overhead projector, the student will be able to

1. place a transparency onto the projector in the correct position for projection
2. operate the controls which include the
   a. power and lamp switch control
   b. focusing control
   c. image projection-elevation control

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #8 from the Media Center
2. take the video cassette to Wet Study Carrel Station #8 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the transparency and projectors provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by projecting a transparency with each of the 3 overhead projectors and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE IX: Avid, Sony and Panasonic Cassette Tape Recorders

A. Objectives: With each cassette tape recorder, the student will be able to

1. place the cassette tape into the tape recorder
2. insert the microphone for recording
3. operate the controls which include the

a. power control
b. volume and tone control
c. recording level control
d. fast forward control
e. rewind control
f. playback control
g. record control
h. counter control

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #9 from the Media Center
2. take the video cassette to Wet Study Carrel Station #9 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the cassette tape and the recorders provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by using a cassette tape with each of the 3 cassette tape recorders and using the controls as needed and upon request by the instructor.

COMPETENCY MODULE X: Newcombe and Sony Reel to Reel Tape Recorders

A. Objectives: With each reel to reel tape recorder, the student will be able to

1. place the feed-reel and take-up reel onto the recorder
2. thread the recording tape through the recorder
3. insert the microphone for recording
4. operate the controls which include the
   a. power control
   b. volume and tone control
   c. recording level control
   d. fast forward control
   e. rewind control
   f. playback control
   g. record control
   h. counter control

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #10 from the Media Center

2. take the video cassette to Wet Carrel Station #10 in the Self-Instructional Laboratory
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student should then use the feed-reel of tape and the take-up reel with the recorders provided in the carrel and execute the competency objectives as presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will then make arrangements with the instructor for a proficiency performance test on the competency. The test will involve the student in demonstrating the competency by using the recording tape with each of the 2 tape recorders and employing the controls as necessary and upon request by the instructor.

COMPETENCY MODULE XI: 3M Transparency Production Process

A. Objectives: The student will be able to

1. identify and acquire the materials necessary for making a 3M transparency
2. arrange the materials in the correct position for making the transparency
3. set the exposure control of the 3M Copy Machine to the correct position for making the transparency
4. insert the arranged materials into the input slot of the 3M Copy Machine for immediate production of the transparency
5. remove the produced transparency and its master materials from the output slot of the 3M Copy Machine

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #11 from the Media Center
2. take the video cassette to Wet Study Carrel Station #11 in the Media Center Production Workroom
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student will then acquire the necessary materials from the Expendable Materials Office of the Media Center and use the materials with the 3M Copy Machine provided in the carrel. In producing the transparency, the student will follow the procedures presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will submit a 3M trnasparency to the instructor for competency evaluation.

COMPETENCY MODULE XII: 3M Thermal Spirit Master Production Process

A. Objectives: The student will be able to

1. identify and acquire the materials necessary for making a 3M Thermal Spirit Master
2. arrange the materials in the correct position for making the thermal spirit master
3. set the exposure control of the 3M Copy Machine to the correct position for making the thermal spirit master
4. insert the arranged materials into the input slot of the 3M Copy Machine for immediate production of the thermal spirit master
5. remove the produced thermal spirit master and concomitant materials from the output slot ot the 3M Copy Machine

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #12 from the Media Center
2. take the video cassette to Wet Study Carrel Station #12 in the Media Center Production Workroom
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student will then acquire the necessary materials from the Expendable Materials Office of the Media Center and use the materials with the 3M Copy Machine provided in the carrel. In producing the thermal spirit master, the student will follow the procedures presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will submit a 3M Thermal Spirit Master to the instructor for competency evaluation.

COMPETENCY MODULE XIII: 3M Thermal Lamination Production Process

A. Objectives: The student will be able to

1. identify and acquire the materials necessary for laminating a picture with the 3M Laminating Process
2. arrange the materials in the correct position for laminating a picture
3. set the exposure control of the 3M Copy Machine to the correct position for laminating the picture
4. insert the arranged materials into the input slot of the

3M Copy Machine for immediate lamination of the picture
5. remove the laminated picture and concomitant materials from the output slot of the 3M Copy Machine

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #13 from the Media Center
2. take the video cassette to Wet Study Carrel Station #13 in the Media Center Production Workroom
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student will then acquire the necessary materials from the Expendable Materials Office of the Media Center and use the materials with the 3M Copy Machine provided in the carrel. In producing the laminated picture, the student will follow the procedures presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will submit a 3M thermal laminated picture to the instructor for competency evaluation.

COMPETENCY MODULE XIV: Diazo Transparency Production Process

A. Objectives: The student will be able to

1. identify and acquire the materials necessary for making a diazo transparency
2. arrange the materials in the correct position for the exposure process of diazo transparency production
3. place the arranged materials on the platen carrier of the Diazo Proto Printer which is the device used for the exposure process of producing a diazo transparency
4. insert the platen carrier, with arranged materials in place, into the Diazo Proto Printer
5. set the exposure control of the Diazo Proto Printer to the correct position to automatically begin exposure process
6. remove the diazo film and concomitant materials from the Diazo Proto Printer at termination of exposure
7. develop the diazo film in the ammonia fume development device

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #14 from the Media Center
2. take the video cassette to Wet Study Carrel Station #14 in the Media Center Production Workroom
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency

4. after viewing the cassette in its entirety one or more times, the student will then acquire the necessary materials from the Expendable Materials Office of the Media Center and use the materials with the Diazo Proto Printer provided in the carrel for the exposure process with the diazo film. At completion of the exposure process, the student will then develop the diazo film by inserting it into the ammonia development device. In producing the diazo transparency, the student will follow the procedures presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will submit a diazo transparency to the instructor for competency evaluation.

COMPETENCY MODULE XV: Lift Transparency Production Process

A. Objectives: The student will be able to

1. identify and acquire the materials necessary for making a lift transparency
2. differentiate between magazine pictures that can be produced into lift transparencies and those that cannot be used for that purpose
3. place the pressure sensitive adhesive acetate onto the magazine picture and apply the required pressure
4. place the picture, with acetate in place, into the required solution in order to separate the paper from the acetate which then contains the picture image
5. remove the clay residue from the acetate after separation from the paper
6. dry the lift transparency in final preparation for projection of the picture

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #15 from the Media Center
2. take the video cassette to Wet Study Carrel Station #15 in the Media Center Production Workroom
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student will then acquire the necessary materials from the Expendable Materials Office of the Media Center and use the materials in the carrel for producing the lift transparency. In producing the lift transparency, the student will follow the procedures presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to

his or her satisfaction, the student will submit a lift transparency to the instructor for competency evaluation.

COMPETENCY MODULE XVI: Wet and Dry Picture Mounting Processes

A. Objectives: The student will be able to

1. identify and acquire the materials necessary for making a wet mounted picture
2. apply rubber cement to the appropriate areas of the picture and mounting board surface
3. make placement of the picture on the mounting board surface after the rubber cement has dried
4. remove excess rubber cement from the mounting board surface after picture has been mounted
5. identify and acquire the materials necessary for making a dry mounted picture
6. arrange the picture and dry mounting tissue in the correct position for mounting the picture
7. set the temperature control of the tacking iron to the correct position and use the tacking iron to adhere the dry mounting tissue to the picture
8. place the picture with the dry mounting tissue onto the mounting board and use the tacking iron to adhere a section of the dry mounting tissue to the mounting board
9. set the temperature control of the dry mounting press to the correct position for mounting the picture
10. insert the materials into the dry mounting press and lower lid of press into position for mounting the picture
11. raise lid of the dry mounting press and remove the mounted picture

B. Activities: To develop the objectives of the competency and complete the module, the student will

1. obtain video cassette #16 from the Media Center
2. take the video cassette to Wet Study Carrel Station #16 in the Media Center Production Workroom
3. insert the video cassette into the playback unit and view the cassette in its entirety for developing an understanding of the total concept of the competency
4. after viewing the cassette in its entirety one or more times, the student will then acquire the necessary materials from the Expendable Materials Office of the Media Center and use the materials and equipment provided in the carrel for producing the wet and the dry mounted pictures. In producing these mounted pictures, the student will follow the procedures presented by the cassette. The student should continue to view the cassette during competency execution, if necessary, by stopping, starting and/or rewinding the cassette.

C. Evaluation: After meeting the objectives of the competency to his or her satisfaction, the student will submit a wet mounted picture and a dry mounted picture to

the instructor for competency evaluation.

After issuing copies of this outline to the students, instructions will be given on using the outline and making arrangements for competency evaluation as described in section C of each competency module. Scheduled plans for competency evaluation at specified times throughout the semester of the course will be mutually determined by the students and the instructor.

In addition to the evaluation of the individual student, the value of the Self-Instructional System will also be evaluated. This evaluation will occur through an experimental research approach in which a group of class sections will employ the Self-Instructional System for developing the competencies while another group involving an equal number of class sections will receive the conventional demonstration-practice method of developing the competencies. The student evaluation results of both groups will be compared in an effort to determine if a significant difference exists between the self-instructional method of teaching the educational media competencies and the conventional demonstration-practice method.

RECOMMENDATIONS

The results of this study permitted the following recommendations to be made:

A. The video cassettes that will be employed in the Self-Instructional System should be stored and circulated by the Media Center on a reserve basis until such time when a dial access retrieval system can be employed within the wet study carrel stations.

B. During its first year of operation, the Self-Instructional System should be used only with sections of the introductory educational media course and for no other purpose.

C. Sections of the course that are assigned to use the Self-Instructional

System should also use the textbook manual: Audiovisual Fundamentals: Basic Equipment Operation and Simple Material Production by John R. Bullard and Calvin E. Mether.

D. Students in course sections that employ the Self-Instructional System should be required to complete the various competencies by a specified time and according to a staggered schedule. The scheduling is important in order for the system to function smoothly without overload problems.

E. When scheduling problems are anticipated due to class size, the students in each self-instructional class section should be grouped into teams of 2's or 3's in order to utilize the Self-Instructional System smoothly and effectively.

F. The construction of the wet study carrel stations and the production of the video cassettes should occur during the fall semester of 1975 with plans for instructional implementation of the Self-Instructional System to begin with the opening of the spring semester of 1976.

By developing and implementing this Self-Instructional System, the faculty members of the Media Communication Science Department of Trenton State College can:

A. Utilize the classroom contact time in the educational media course more effectively and cover the cognitive areas of the course content more extensively.

B. Give greater attention to student needs as they apply to the total scope of educational media utilization within the junior year teaching practicum experiences of the students.

C. Provide self-instructional services in educational media competencies to secondary education students, college faculty and inservice teacher workshops held at the college for local school districts.

D. Significantly decrease the campus service demands presently placed on

the Center for Media and Technology by discontinuing the equipment and production demonstration-practice workshops that require the delivery, assembly, disassembly and return of numerous pieces of equipment.

E. Serve in an advisory capacity to other departments that may be interested in developing similar self-instructional programs in their disciplines for use in the Self-Instructional System.

BIBLIOGRAPHY

Butler, Lucius A. "Self-Instruction Lab Teachers Communication Skills," Audiovisual Instruction, XV (February, 1970), 55-56+.

Curl, David H. "University of Connecticut Slide Sets," Audiovisual Instruction, XII (May, 1967), 480.

Curl, David H. "Western Michigan University Auto-Tutorial," Audiovisual Instruction, XII (May, 1967), 480.

Curl, David H. "The Self-Instructional Audiovisual Laboratory," Educational Screen A. V. Guide, XLVI (May, 1967), 24-25.

Freedman, Morris. "New York City's Televised Teacher Training Telecasts," Audiovisual Instruction, XII (May, 1967), 483.

Gerlack, Vernon S. "Programming Audiovisual Laboratory Instruction," Educational Screen A. V. Guide, XLVI (May, 1967), [illegible]-21.

Gorman, D. A. "Step Beyond: The Facilitation of Learning Through a Self-Help Instructional Media Laboratory," Audiovisual Instruction, XVIII (December, 1973), 5+.

Hempstead, R. Ross. "Push-Button Education in the University of Maryland's Non-Print Media Lab," College and University Business, LV (October, 1973), 29-32.

Macklin, Patricia A. "Ohio State's Media Lab," Audiovisual Instruction, XII (May, 1967), 484-488.

Rothenberg, Sidney. "Self-Instruction at Syracuse University," Audiovisual Instruction, XII (May, 1967), 481-482.

Schlieve, Ronald P. "Wisconsin State University's Auto-Instructional Laboratory," Audiovisual Instruction, XII (May, 1967), 488.